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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,016	10/02/2003	Mitsuo Usami	520.39937CX1	6441

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EXAMINER

LUHRS, MICHAEL K

ART UNIT PAPER NUMBER

2824

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/676,016

Applicant(s)

USAMI, MITSUO

Examiner

Michael K. Luhrs

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 and 14-20 is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/818,638.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02 October 2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: search history.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Burns USPN 4,063,993. Burns teaches:

*Frame* as lead patterns 15, lead patterns (line 17-18, column 6) having,

aperture (*opening*) 23 (line 23, column 6) on

*substrate* as tape 11, line 63, column 4, *adhesive paste* as epoxy (line 13, column 4) of support structures

13, (line 62, column 4) (Fig. 2) and as adhesion promoting agent (line 39, column 7);

*semiconductor devices* as dies 27 (line 4-5, column 7);

*roll* as in line 25-26, column 3, and 5 *slices* of 70mm tape 11 shown in Fig. 3, (see also, the prior art discussed by Burns, in column 1).

Note that a “product-by-process” claim is directed to the product per se, no matter how actually made. The applicant’s claim 13 does not distinguish over the Burns reference regardless of the process used to make the slices, because only the final product is relevant, not the recited processes of, *winding and cutting* to form the slices.

Note that a “product-by-process” claim is directed to the product per se, no matter how actually made.

Thus regarding claim 13, see:

In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also in re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; in re Fessmann, 180 USPQ 324; in re Avery, 186 USPQ 161; in re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and in re Marosi et. al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a “product by process” claim and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a process, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

3. A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Yanagisawa USPN 6,509,630.

Yanagisawa shows the slice of roll in Fig. 2A and 2B: reel 46 (line 42, column 6), substrate 1 (line 39, column 6) semiconductor devices 60, line 60, column 6, adhesive, line 2, column 7, device hole 14, line 36, column 7, resin 62, lines 3-4, column 11, "wound in reel", line 27, column 9.

Note that a "product-by-process" claim is directed to the product per se, no matter how actually made. The applicant's claim 13 does not distinguish over the Yanagisawa reference regardless of the process used to make the slices, because only the final product is relevant, not the recited processes of, *winding and cutting* to form the slices.

Note that a "product-by-process" claim is directed to the product per se, no matter how actually made.

Thus regarding claim 13, see:

again, the case law recited above.

#### *Allowable Subject Matter*

5. Claims 1-12 and 14-20 are allowed.

6. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, there was no teaching or suggestion in the prior art for a method of manufacturing an electronic device, comprising the steps of: placing a positioning jig or frame having a plurality of openings on a film based substrate having adhesive paste thereon; placing a plurality of semiconductor devices into said openings; removing said positioning jig or frame from said film based substrate; winding said film based substrate to form a roll; and cutting said roll into round slices. Claims 2-12, dependent on claim 1 are thereby also allowable.

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Regarding claim 14, there was no teaching or suggestion in the prior art for a method of manufacturing an electronic device, comprising the steps placing a positioning jig or frame having a plurality of openings on a film based substrate having adhesive paste thereon; placing a plurality of semiconductor devices each having a support member into said openings; removing said positioning jig or frame from said film based substrate; winding said film based substrate to form a roll; and cutting said roll into round slices. Claims 15-20, dependent on claim 14 are thereby also allowable.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fosberry et. al. USPN 6,214,640 teaches a frame '42' in Fig. 3B to accommodate chips for encapsulation (there is no winding of the film substrate), see also Distefano et. al. USPN 5,776,796. Gutentag USPN 5,524,765 provides a gel carrier to accommodate chips yet the gel carrier is not removed, rather the chip can be removed therefrom for continuous processing, hence is not wound without the gel carrier. Usami USPN 6,440,773 teaches stiffening the IC to reduce damage. Fujikawa et. al. USPN 6,203,655 teaches a roll for IC card. Hashimoto USPN 6,326,233 teaches reinforcement and roll. Hoppe et. al. USPN 4,417,413 places chip into support window. Takasugi et. al. USPN 6,344,824 teach cube and sphere IC. Yoshig et. al. USPN 6,173,900 teach the antenna exterior to the IC. Ohashi et. al. USPN 4,879,153 teach a laminated IC card. Nagasaku et. al. USPN 6,717,544 teach antenna on chip/resin package. Kaiya et. al. USPN 6,460,773 teach IC card and antenna. Tsui et. al. USPN 6,806,725 teach a frame for singulation. Fischbach et. al. USPN 6,804,121 teach a housing. Kasahara et. al. USPN 6,797,543 teach adhesive on frame with IC mounted. Kamiyama et. al. USPN 5,422,163 teach a flexible substrate for mounting semiconductor chip. Kawada USPN 6,451,623 teach a carrier reel. Kohama et. al. USPN 6,412,701 teach a laminated flexible IC card process. Miyajima USPN 5,891,384 teach a encapsulant molding machine that accepts a release film. MacPherson et. al. USPN 6,235,556 provide opening cavity in the lead frame. Kayanuma et. al. USPN 6,156,587 teach a jig with protruding pins. Okamoto et. al. USPN 6,731,509 mounts IC onto sheet.

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Moden et. al. USPN 6,013,535 teach the LOC attach of the semiconductor die (line 40-41, column 7) to their process that adds adhesive to a roll as seen in Fig. 2 and 3. Pierson USPN 6,569,710 teaches the stiffener panel 21 (line 64, column 4) which is essentially a jig, albeit it is not removed.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael K. Luhrs whose telephone number is 571-272-1874. The examiner can normally be reached on M-F, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael K. Luhrs 4/14/05



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